

THIS REPORT HAS BEEN DELIMITED
AND CLEARED FOR PUBLIC RELEASE
UNDER DOD DIRECTIVE 5200.20 AND
NO RESTRICTIONS ARE IMPOSED UPON
ITS USE AND DISCLOSURE.

DISTRIBUTION STATEMENT A

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED.

Services Technical Information Agency

Due to limited supply, you are requested to return this copy WHEN IT HAS SERVED
YOUR PURPOSE so that it may be made available to other requesters. Your cooperation
is appreciated.

39529

WHEN GOVERNMENT OR OTHER DRAWINGS, SPECIFICATIONS OR OTHER DATA
FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED
ACQUISITION OR PROCUREMENT OPERATION, THE U. S. GOVERNMENT THEREBY INCURS
NO LIABILITY, NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE
GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE
DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY
ANYONE NOR OTHERWISE AS IN ANY MANNER LICENSEING THE HOLDER OR ANY OTHER
CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE,
REPRODUCE, OR ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Reproduced by
DOCUMENT SERVICE CENTER
KNOTT BUILDING, DAYTON, 2, OHIO

NCLASSIFIED

AD No. 39529

ASTIA FILE COPY

GLASS FIBER PAPER IMPREGNATED WITH SILICIC ACID

AS A NEW CHROMATOGRAPHIC TOOL

In attempting to separate saturated mono-, di-, and triglycerides by paper chromatography, it was found difficult to locate the spots, because the paper is destroyed by the drastic tests necessary to locate these compounds. To overcome this difficulty, a fine glass fibre filter paper was obtained, which, when impregnated with silicic acid, was found to have chromatographic properties similar to that of silicic acid columns.

Fillerup and Mead (1) were able to separate a mixture of triglycerides, fatty acids, cholesterol and cholesterol esters on a silicic acid column using increasing amounts of ethyl ether in petroleum ether as eluting solvents. It was found in this laboratory that mono-, di-, and tripalmitin, cholesterol and cholesterol acetate can be separated on glass paper impregnated with silicic acid using a developing solvent consisting of a 2% ethyl ether in isooctane. Typical R_f values obtained were as follows: 1-monopalmitin, 0.05; dipalmitin, 0.27; cholesterol, 0.41; tripalmitin, 0.79; cholesterol acetate, 1.0.

The location of the sterol spots was accomplished by spraying one side of the chromatogram with the Liebermann-Burchard reagent followed by heating over an electric hot plate with exposed heating element. Cholesterol and cholesterol acetate appeared as bright pinkish-red spots on a white background. All areas containing carbon compounds were located by spraying the reverse side of the chromatogram with a dichromate-sulfuric acid-water solution followed by heating over the hot plate. All areas containing carbon compounds appeared as a light

to dark greyish-black spots on a yellowish-orange background. The color of the spot depended in large measure upon the amount of carbon present.

This technique is being adapted to the separation of other groups of compounds. The details of the procedure will be published later.

Julius W. Dieckert

Raymond Reiser

Department of Biochemistry and Nutrition
Texas Agricultural and Mechanical College
College Station, Texas

References

1. D. L. Fillerup and J. F. Mead, Proc. Soc. Exptl. Biol. and Med. 83:574 (1953).

Armed Services Technical Information Agency

Because of our limited supply, you are requested to return this copy WHEN IT HAS SERVED YOUR PURPOSE so that it may be made available to other requesters. Your cooperation will be appreciated.

AD

39529

NOTICE: WHEN GOVERNMENT OR OTHER DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE U. S. GOVERNMENT THEREBY INCURS NO RESPONSIBILITY, NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Reproduced by
DOCUMENT SERVICE CENTER
KNOTT BUILDING, DAYTON, 2, OHIO

UNCLASSIFIED